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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,973	11/19/2003	Robert A. DiMilia	03-1842	7574

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INTELLECTUAL PROPERTY
ALCOA TECHNICAL CENTER, BUILDING C
100 TECHNICAL DRIVE
ALCOA CENTER, PA 15069-0001

EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,973

Applicant(s)

DIMILIA ET AL.

Examiner

Harry D. Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/18/04, 7/25/05, 8/4/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group II, claims 19-26, in the reply filed on 9 June 2006 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Several of the species disclosed in the long list of elements are not stable in oxide form. Thus, it is unclear whether the claim means the element or the oxide of the element. Examples included P and F. The Examiner assumes that Applicant's intent for these elements was a compound of that element with oxygen forming a complex anion (e.g. -PO_4 , FO_3) bonded with a cation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 19-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Alder (US 3,960,678).

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Alder discloses (see abstract, col. 1, lines 5-8, col. 3, lines 16-61 and Table 1) stable anodes for aluminum electrolysis cells that contain oxides, and expressly disclose Fe_2O_3 and Fe_3O_4 .

Although Alder discloses that SnO_2 was the preferred base oxide, it is clear from col. 3, lines 45-47) that Alder contemplated making the anodes with either Fe_2O_3 or Fe_3O_4 as the base material of the anode.

Regarding claims 20-22, each of the two electrodes would have been at or near 100 wt% Fe_2O_3 or Fe_3O_4 .

Regarding claim 23, Alder discloses (see col. 3, lines 57-61) including an additive oxide selected from the group of Ca, Mn, Ba, Cu, Zn, Co, Cr, In, Nb, W or Zr.

Regarding claim 24, the anode of Alder was a monolithic body.

Regarding claim 26, since Alder teaches the same composition of the anode as claimed, one of ordinary skill in the art would have considered it to inherently possess the claimed stability in molten cryolite at up to 960°C.

6. Claims 19, 20, 22, 23, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Duruz et al (US 6,372,099).

Duruz et al disclose (see abstract, col. 1, lines 6-12, col. 3, lines 20-47 and col. 3, line 64 to col. 4, line 6) stable anodes for aluminum electrolysis cells that contain oxide coatings, and expressly disclose Fe_2O_3 (hematite).

Regarding claims 20 and 22, the anode was predominantly (i.e.- at or near 100 wt%) Fe_2O_3 .

Regarding claim 23, Duruz et al disclose (see col. 5, lines 40-41) including an additive oxide selected from the group of Al, Si, Mg, Zn, Sn, Zr, Ce or Y.

Regarding claim 25, the anode of Duruz was formed as a metallic body having an iron oxide coating as claimed.

Regarding claim 26, since Duruz et al teach the same composition of the anode as claimed, one of ordinary skill in the art would have considered it to inherently possess the claimed stability in molten cryolite at up to 960°C.

7. Claims 19-21 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Roos et al (US 4,411,761).

Roos et al disclose (see abstract and col. 2, lines 4-36) stable anodes that contain oxide coatings, and expressly disclose Fe_3O_4 .

Regarding claims 20 and 21, the anode included up to 70 wt% Fe_3O_4 .

Regarding claims 24 and 25, Roos et al disclose using the anode either as a coating on a substrate or as a stand-alone, monolithic anode.

Regarding claim 26, since Roos et al teach the same composition of the anode as claimed, one of ordinary skill in the art would have considered it to inherently possess the claimed stability in molten cryolite at up to 960°C.

8. Claims 19-21, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Martinsons (US 3,711,397).

Martinsons discloses (see abstract, col 2, lines 39-49 and col. 6, lines 1-8) stable anodes that contain spinel coatings, and expressly discloses using magnetite (Fe_3O_4) as the spinel coating.

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Regarding claims 20 and 21, the anode coating included substantially all (i.e.-100 wt%) Fe_3O_4 .

Regarding claims 25, Martinsons discloses using the spinel as a coating on the anode.

Regarding claim 26, since Martinsons teaches the same composition of the anode as claimed, one of ordinary skill in the art would have considered it to inherently possess the claimed stability in molten cryolite at up to 960°C .

Martinsons discloses (see col. 19, lines 45-67) that the anode was usable in any electrochemical reaction where a corrosion-resistant anode having long life was desired. Thus, with respect to the intended use, "for use in an electrolytic metal production cell", of the claimed anode, it is considered that Martinsons teaches using the anode in a corrosive environment, such as molten cryolite.

9. Claims 19, 20, 22-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by TDK Electronics (GB 1,433,805).

TDK Electronics discloses (see abstract, page 1, lines 10-18) stable anodes that contain Fe_2O_3 at up to 95 mol%.

Regarding claims 20 and 21, the anode coating included up to 95 mol% Fe_2O_3 .

Regarding claims 24, TDK Electronics discloses using the oxide as a monolithic body.

Regarding claim 26, since TDK electronics teaches the same composition of the anode as claimed, one of ordinary skill in the art would have considered it to inherently possess the claimed stability in molten cryolite at up to 960°C .


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Harry D Wilkins, III
Primary Examiner
Art Unit 1742

hdw